

REMARKS

Claims 1-14 are all the claims pending in the application. Applicants add claims 13 and 14 to further define the invention as discussed in further detail below.

The drawings filed on February 24, 2000 have been accepted by the Examiner. However, Formal Drawings were filed on April 10, 2000. The Examiner is respectfully requested to acknowledge receipt of the Formal Drawings filed on April 10, 2000.

Applicants respectfully request that the Examiner acknowledge Applicants' claim to foreign priority and indicated receipt of the certified copy of the Priority Document as filed on April 10, 2000.

Claims 4-6, 8 and 9 are rejected under 35 U.S.C. § 112, second paragraph. Applicants amend the claims to remove any ambiguities.

Claims 1-5 and 7-12 are rejected under 35 U.S.C. § 102(a) as being anticipated by Mochizuki et al. (6,097,690).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mochizuki et al. (6,097,690) in view of Yamakawa et al. (5,963,535).

Analysis

Claim 1 is directed to an optical pickup apparatus. It includes a laser light emitting device, a deflector, a lens driver for moving an objective lens, and a frame member wherein the deflector is positioned so that the center of the intensity distribution of the laser light is aligned with the optical axis of the objective lens.

Applicant respectfully submits that Mochizuki does not teach or suggest that the deflector is positioned such that the center of the intensity distribution of the laser light is aligned with the optical axis of the objective lens. This is an important feature of the present invention for making effective

use of the portion of the laser light that has a strong intensity. See pages 8-10 of the Specification, for example.

Thus, claim 1 is patentable.

Claim 4 is patentable for at least the same reasons as claim 1. Namely, Mochizuki fails to disclose a method for moving a deflector in a direction parallel with the optical axis of the laser light so that a center of an intensity distribution of the light is aligned with an optical axis of the objective lens. 2

Thus, claim 4 is patentable.

Still further, claim 8 is patentable for at least the same reasons as claims 1 and 4. Namely, Mochizuki fails to teach or suggest a method wherein the deflector is moved in a direction parallel with an optical axis of the objective lens so that a center of an intensity distribution of the laser light is aligned with the optical axis of the objective lens. 3

Thus, claim 8 is patentable.

Claim 10 is directed to an optical pickup apparatus which includes a frame member for supporting the laser light emitting device and the lens driver.

Mochizuki also does not teach or suggest that the support member supports the laser light emitting device and the lens driver so that the optical axis of the objective lens is aligned with the center of the intensity distribution of the laser light, as recited in claim 10. 4

The above alignment is performed to further enhance the positioning accuracy of the laser beam onto the optical disk. Therefore, it is not inherent in Mochizuki, but rather critical for the optical pickup apparatus, especially to an apparatus in which the laser beam is used to record information onto an optical recording disk.

AMENDMENT UNDER 37 C.F.R. § 1.111
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Thus, claim 10 is patentable.

The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claims 1, 4, 8 and 10, by virtue of their dependency therefrom.

Finally, Applicants add claims 13 and 14 to further define the invention. These claims are directed to the laser light emitting device that records information on the optical recording disk with the laser light. As discussed above, it is important to position the laser beam accurately, especially in the instance of using the laser beam to record information on an optical recording disk. In view of the foregoing, claims 13 and 14 are patentable for these reasons, as well as due to their dependency from claims 1 and 10.

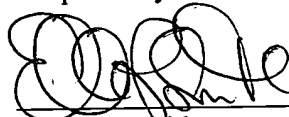
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

4. (Amended) A method of manufacturing [the] an optical pickup apparatus [as set forth in claim 1], comprising the steps of:

providing a laser light emitting device for recording information on an optical recording disk;

providing a deflector for deflecting laser light emitted from the laser light emitting device as a deflection angle;

providing an objective lens for conversing the laser light deflected by the deflector onto the optical recording disk;

adjusting the deflection angle [of the deflector] such that a direction in which [the] a diverging angle in a direction perpendicular to [the] an optical axis of the [emitted] laser light emitted from the laser emitting device becomes narrowest is aligned with the radial direction of the optical recording disk;

moving the deflector in a direction parallel with the optical axis of the laser light such that [the] a center of [the] an intensity distribution of the laser light is aligned with [the] an optical axis of the objective lens.

8. (Amended) A method of manufacturing [the] an optical pickup apparatus [as set forth in claim 1], comprising the steps of:

providing a laser light emitting device;

providing a deflector for deflecting laser light emitted from the laser light emitting device at a deflection angle;

providing an objective lens for conversing the laser light deflected by the deflector onto an optical disk; and

[adjusting the deflection angle of the deflector such that a direction in which the diverging angle in a direction perpendicular to the optical axis of the emitted laser light from the laser emitting device becomes narrowest is aligned with the radial direction of the optical recording disk;]

moving the deflector in a direction parallel with [the] an optical axis of the objective lens such that [the] a center of [the] an intensity distribution of the laser light is aligned with the optical axis of the objective lens.

9. (Amended) [A] The manufacturing method [of manufacturing the optical pickup apparatus] as set forth in claim [7] 8, further comprising the [steps] step of:

adjusting the deflection angle [of the deflector] such that [a direction in which the] a diverging angle of the laser light emitted from the laser emitting device in a direction perpendicular to [the] an optical axis [of the emitted laser light from the laser emitting device] thereof becomes the narrowest is aligned with [the] a radial direction of the optical [recording] disk[;

moving the deflector in a direction parallel with the optical axis of the objective lens such that the center of the intensity distribution of the laser light is aligned with the optical axis of the objective lens].